

# HEDGEHOGS OF THE DESERT OF RAJASTHAN

BY

DAYA KRISHNA, D. PHIL. (Alld.); PH. D. (Cantab.),

AND

ISHWAR PRAKASH

*Jaswant College, Jodhpur.*

## PART II. FOOD AND FEEDING HABITS

### INTRODUCTION

This is the second paper of the series<sup>1</sup> on the habits of the hedgehogs, *Hemiechinus auritus collaris* Gray and *Paraechinus micropus micropus* Blyth, found in the desert of Rajasthan. These animals are popularly believed to destroy vegetation, especially modified stems and roots (Adams, 1899), but are generally seen under light posts at night feeding on insects. This contradiction between popular belief and observed fact led us to plan an investigation and study of the feeding habits of these curiously unsocial animals under various conditions in nature, in semi-captivity and captivity. The contents of the stomachs of many hedgehogs were examined soon after they were captured. Care had been taken to catch them after their feeding time. The conditions of semi-captivity were the same as described in the first part of this paper. Under these conditions they were presented with a wide variety of substances, both of animal and of plant origin. These substances were offered separately and also together in various combinations to find out their food preferences. A good number of animals was taken for each experiment.

Hedgehogs being nocturnal remain hidden in their burrows throughout the day, but at dusk they come out for feeding. After trotting about for five to six hours in search of food, they again cease their activities and roll up to sleep. If food is available they can take it in large quantities. Some of the alimentary canals which were examined were completely packed with the chitinous remains of the bodies of the 'Dung-Roller'.

### FOOD IN NATURE

To ascertain their food in nature a number of both *H. a. collaris* and *P. m. micropus* were dissected immediately after their capture. The following were the undigested remains of food in the stomachs of the hedgehogs:

1. Wings resembling those of *Bucephalus helicopriss*.
2. Elytra of several beetles (unidentifiable).
3. Hard bony pieces (probably amphibian).

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<sup>1</sup> Part I, *JBNHS*, 53 (1) : 38-43—Aug. 1955.

4. Pieces of skin, amphibian as well as mammalian.
5. Thread-like flexible tendon.
6. Chitin pieces, of which those from Dung-Roller and *H. bucephalus* could be identified.
7. Spiny hook of some insect leg.
8. Small pieces of spines of *H. a. collaris*. (Only in one stomach of *H. a. collaris*).
9. Complete, slightly disintegrated beetle, *Helicopriss bucephalus*.

Contents of the alimentary canals of hedgehogs did not show any traces of vegetable matter, although the contents were thoroughly examined under the microscope.

#### FOOD IN SEMI-CAPTIVITY AND CAPTIVITY

In semi-captivity the food was provided to them in the evening, and in captivity in early morning. For capturing an animal, it was observed that they chased it with appreciable speed and attacked it, usually on its head. After eating the prey, its remains were generally taken to the burrow for future use. The following substances were tried in different conditions. 25 hedgehogs, 13 *H. a. collaris* and 12 *P. micropus*, were used for the experiments.

Expt.	No. of animals	Conditions	Food given	Observations	Remarks
1.	5 <i>a. collaris</i> and 5 <i>m. micropus</i>	Captivity	Earthworms, living and chloroformed.	Not taken	...
2.	13 <i>a. collaris</i> and 12 <i>m. micropus</i>	Captivity and semi-captivity	Beetles, locusts, crickets, mantis, larvae of many insects, neuropterous and lepidopterous insects and termites etc., living and chloroformed.	Taken	The actual food in nature, <i>Helicopriss bucephalus</i> was preferred to all other insects.
3.	13 <i>a. collaris</i> and 12 <i>m. micropus</i>	Captivity and semi-captivity	Ants, bees, wasps etc., killed with KCN bottle.	Not accepted	...
4.	2 <i>a. collaris</i>	Captivity	Scorpion, (a) living (b) killed.	(a) Not accepted (b) taken	Even the sting was taken.
5.	5 <i>a. collaris</i> and 5 <i>m. micropus</i>	Semi-captivity	Snail, living.	Not taken	...
6.	10 <i>a. collaris</i> and 10 <i>m. micropus</i>	Captivity and semi-captivity	Toads ( <i>Bufo arenarius</i> ) and Frogs ( <i>Rana tigrina</i> ), living.	Caught, killed and eaten	Even the bones were taken.

Expt.	No. of animals	Conditions	Food given	Observations	Remarks
7.	5 <i>a. collaris</i> and 5 <i>m. micropus</i>	Captivity	<i>Uromastix hardwickii</i> , living.	Not attacked	...
8.	5 <i>a. collaris</i> and 5 <i>m. micropus</i>	do.	<i>Uromastix hardwickii</i> , chloroformed with ventral incision.	Viscera and the tail taken	...
9.	1 <i>a. collaris</i>	do.	<i>Varanus monitor</i> , living.	Not taken	The tail of the <i>Varanus</i> was caught firmly by the hedgehog between its jaws. The lizard attacked the hedgehog furiously and in doing so its mouth was injured severely.
10.	5 <i>a. collaris</i> and 5 <i>m. micropus</i>	do.	<i>Varanus monitor</i> , chloroformed with a ventral incision.	Viscera taken	...
11.	1 <i>a. collaris</i>	do.	<i>Eryx johnii</i> (Nine inches long), living.	The entire animal was taken	...
12.	1 <i>a. collaris</i>	do.	<i>Ptyas mucosus</i> (13" long), living.	Taken	The hedgehog caught it by the tail and rolled over it, to give chance to the snake to strike against its spiny armour. In doing so the snake succumbed to injuries & was devoured.
13.	5 <i>a. collaris</i> and 5 <i>m. micropus</i> .	Captivity	Pigeon ( <i>Columba livia</i> ), living. (Its wings were broken)	Viscera taken	The main point of attack was the anus.
14.	13 <i>a. collaris</i> and 12 <i>m. micropus</i> .	Captivity and semi-captivity	Eggs. (a) Hen,  (b) Pigeon.	(a) Not taken  (b) Taken	(a) The contents were sipped when provided in a plate. (b) The egg was broken by pressing it between the jaws.

Expt.	No. of animals	Conditions	Food given	Observations	Remarks
15.	5 <i>a. collaris</i> and 5 <i>m. micropus</i> .	Captivity	Rats, ( <i>Rattus rattus</i> ), living.	One was caught, killed and its viscera was taken	Prey was killed by biting its legs and face, and was shared by all the inmates of the cage.
16.	13 <i>a. collaris</i> and 12 <i>m. micropus</i> .	Captivity and semi-captivity	Rats chloroformed, with ventral incision.	Viscera taken	...
17.	10 <i>a. collaris</i> and 10 <i>m. micropus</i> .	do.	Gerbilles ( <i>Meriones hurrianae</i> and <i>Tatera indica</i> ), chloroformed, with a ventral incision.	do.	...
18.	do.	do.	Squirrel ( <i>Funambulus pennanti</i> ), chloroformed, with ventral incision.	do.	...
19.	do.	do.	Rabbit ( <i>Lepus dayanus</i> ), chloroformed, with ventral incision.	do.	Very often the living animal was attacked. Once the hedgehog injured it severely on the medial side of the thigh.
20.	13 <i>a. collaris</i> and 12 <i>m. micropus</i> .	do.	Bats ( <i>Rhinopoma kinneari</i> ), living.	The entire animal was taken except the patagium	...
21.	13 <i>a. collaris</i> and 12 <i>m. micropus</i> .	Captivity and semi-captivity	Meat of goat, fresh.	Taken	In captivity it was the most relished food and pieces of lungs and liver were preferred.
22.	do.	do.	Milk of cow and buffalo, fresh, boiled and sugared.	do.	Less preferred in captivity but in semi-captivity the hedgehogs survived mainly on milk.
23.	10 <i>a. collaris</i> and 10 <i>m. micropus</i> .	Captivity	Gram, wheat, barley, millet and rice, etc.	Not taken	When mixed with cow-dung some grains were picked up.

Expt.	No. of animals	Conditions	Food given	Observations	Remarks
24.	13 <i>a. collaris</i> and 12 <i>m. micropus</i> .	Captivity and semi-captivity	20 common vegetables.	Not taken.	...
25.	do.	do.	10 entire plants found in the same locality where the hedgehogs were collected.	do.	...

The interesting feature of the feeding habits of these hedgehogs was that they developed a cannibalistic tendency in the presence of a dead companion. Whenever a dead hedgehog was placed in the cage its inmates rushed to the carcass and started feeding on it, beginning with the viscera (Prakash, 1953). They were observed to be very fond of their own young ones; even the mothers fed upon their progeny (Prakash, 1955). They also showed remarkable resistance to hunger and thirst. In cages they could be kept alive without food and water for four to six weeks. At one time two of them (*H. a. collaris*) were locked by mistake in the laboratory. On reopening after 10 weeks the hedgehogs came out alive.

#### SUMMARY

1. A wide variety of substances was presented to captive and semi-captive hedgehogs to find out their food preferences.
2. Alimentary canals of freshly caught hedgehogs were examined to investigate their food in nature; which was mainly non-vegetarian.
3. Hedgehogs, *Hemiechinus auritus collaris* Gray and *Paraechinus micropus micropus* Blyth prefer insects and fresh goat meat in captivity and milk in semi-captivity.
4. Hedgehogs did not take any plant or vegetable in captivity and semi-captivity; moreover no plant tissue was found in the contents of their alimentary canals.

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